

SECTION 908 -- CONCRETE SLOPE PROTECTION, DITCH LINING, FLUMES AND DISCHARGE STRUCTURES

908.01 -- Description

The Contractor shall furnish all materials, prepare the subgrade, and construct the following as prescribed in the plans:

1. Concrete slope protection.
2. Concrete ditch lining.
3. Concrete flumes.
4. Concrete discharge structures.

908.02 -- Material Requirements

1. Concrete shall be Class "47B-2,900".
2. All materials shall conform to the requirements in Table 908.01.

Table 908.01

Material Requirements	
Applicable Materials	Section
Concrete	1002
Preformed Joint Filler	1015
Reinforcing Steel	1020, 1022, 1023

908.03 -- Construction Methods

1. a. The Contractor shall prepare the subgrade by trenching or filling to the required elevation.
 - b. The subgrade shall be thoroughly tamped.
 - c. In cuts, the excavation shall be made sufficiently wide to allow placing of forms and performing the required placing and finishing work.
 - d. In fills, the subgrade shall be made at least 1 foot wider on each side than required by the flumes or discharge structures.
 - e. The subgrade shall be excavated carefully in order that the finished grades conform to the neat lines of the bottom and slopes of the structure as shown in the plans.
 - f. No raised places or bumps will be allowed. Depressions left in the surface of the subgrade shall be filled with concrete.
 - g. If necessary, water shall be added by sprinkling to facilitate compaction.
 - h. At the time concrete is deposited, the subgrade shall be thoroughly moistened.
 - i. Sand-fill, when required, shall be uniformly compacted. The moisture content shall be sufficient to allow satisfactory compaction.

2. Tie bars shall be placed at the locations shown in the plans. Tie bars shall be used in all concrete discharge structures that are placed adjacent to the concrete pavement.

3. The forming requirements of Section 607 shall apply to this work.

4. The Contractor shall place joints and reinforcing steel as prescribed in the plans.

5. The backfill shall be graded and compacted to the elevation of the top of the concrete structure as shown in the plans.

6. a. The concrete shall be placed the full thickness of the slab in one operation and shall be consolidated by tamping and the excess concrete screeded off flush with the forms.

b. The edges adjacent to all forms, expansion joints, curbs, or fixtures in the surface shall be thoroughly spaded for the full depth.

c. After consolidation, the surface shall be alternately tamped and struck off with a strike board until all voids are removed and the surface has the required grade and cross section.

7. The Contractor shall finish the edges with a suitable edging tool after the concrete has been floated.

8. The concrete shall be cured by one of the methods prescribed in Section 603.

9. a. Concrete ditch liners shall have joints cut through them at least 25 percent of their slab thickness with an approved tool at intervals of not more than 8 feet.

b. The concrete shall be edged on both sides of the cuts.

c. Each cut shall be vertical and normal to the forms.

10. a. The concrete ditch lining footings and structure turndowns shown in the plans do not need to be formed if concrete is placed directly into excavated trenches that have smooth walls and level bases.

b. Footings and turndowns shall be placed monolithic with the ditch lining.

11. If the trenches are excavated larger than shown in the plans, the entire trench volume is still filled with concrete.

12. The Contractor shall dispose of all excess soil.

908.04 -- Method of Measurement

1. Concrete slope protection will be measured by the square yard of finished surface area, including turndowns.

2. Concrete ditch lining will be measured by the linear foot along the center of the flow line and will be continuous through the end sections.

3. Concrete flumes and discharge structures shall be measured by the each.

908.05 -- Basis of Payment

- | 1. Pay Item | Pay Unit |
|------------------------------|------------------|
| Concrete Flume, Type _____ | Each (ea) |
| Concrete Flume | Each (ea) |
| Concrete Discharge Structure | Each (ea) |
| Concrete Ditch Lining | Linear Foot (LF) |
| Concrete Slope Protection | Square Yard (SY) |
2. In the event that more than one type of discharge structure is shown in the plans, an appropriate designation will be added to the pay item to differentiate as to the type or dimensions required.
3. Payment is full compensation for all work prescribed in this Section.